Risk and Return of Retail Sukuk and Retail Bond in Indonesia Period 2008-2017 (Comparative Study)

Rahma Yudi Astuti[*] dan Asad Arsya Brilliant Fani
Jurusan Manajemen, Fakultas Ekonomi dan Manajemen, Universitas Darussalam Gontor
[*]Email: rahmayudi67@unida.Gontor.ac.id

Abstract

Sukuk and Bonds has differences and similarities. Fundamental differences between sukuk and bonds are first, underlying asset in every sukuk issuance, concept of profit loss sharing and the use of Islamic contracts. Whereas conducted research in practice of differences between sukuk and bonds are still an on-going discussion. This study aims to add the evidence in the discussion regarding whether there is differences between sukuk and bonds in the world of practice, provide investment preferences as well as educating investors in choosing sukuk or bonds as a sustainable and smooth instrument. The method used is Mann Whitney U-Test to test whether there is a different between yield to maturity (return) and standard deviation (risk) of both instruments. Using secondary data of Retail Sukuk (SR) and Retail Bonds (ORI) period 2008-2017 obtained from Indonesia Stock Exchange, Indonesia Bond Market Directory and Indonesia Bond Pricing Agency. The result shows that there is no significance difference of retail sukuk return and risk with retail bonds in Indonesia. Besides retail bonds are show higher return than retail sukuk because of higher coupon and longest mature date. While, retail sukuk is more stable rather than bonds as it backed up by the real underlying asset.

Keywords: Retail Sukuk (SR), Retail Bonds (ORI), Yield to Maturity

INTRODUCTION

The Directorate General of Budget Financing and Risk Management (DGBFRM) or Direktorat Jenderal Pengelolaan Pembiayaan dan Risiko (DJPPR) Ministry of Finance states that Government Securities or Surat Berharga Negara (SBN) consists of five types of financing products, while Government Sharia Securities or SBSN consists of seven financing products. From its both several types, are two products that traded publicly or retail (every people) namely, Retail Government Bonds or Obligasi Negara Ritel (ORI) and Retail Sukuk or Sukuk Ritel (SR)(Kemenkeu.go.id, n.d.-a).

Retail Sukuk is a product that growing rapidly since its first issuance in 2009(Wafiroh, 2016). The data of *Indonesian Government Sukuk Index* (IGSIX) shows that demand for sukuk is fluctuating but always increase, *Indonesian Government Sukuk IndexTotal Return* (IGSIX TR) is seen from *total return of* the increase in the sukuk index(Indonesia Stock Exchange & Agency, 2017). Therefore people are interested to invest in such instrument.

Despite of many similarities, bonds and sukuk are has many differences as well. Discussions in the academic environment and practice, regarding the differences between both instruments have been widely carried out. Theoretically Purnawati(Purnawati, n.d.), Nasrullah(Nasrullah, 2015), Zubair(Zubair, 2012) and Yahya(Yahya, 2015), have mentioned the fundamental differences between sukuk and bonds that lie in the *underlying asset*, the concept of profit and loss sharing and the use of Islamic contracts (*akad*).

Whereas conducted research, the field of differences practice in sukuk and bonds is still an ongoing discussion that seems has not yet come to clear conclusion. Rodoni and Setiawan(Rodoni & Setiawan, 2016) said that there was no difference in yield between sukuk and bonds measured using *Yield to Maturity* and *Macaulay Duration* but there were differences when calculated based on *Value at Risk* (*VaR*). Hassan uses *VaR* approach, state a portfolio that consists of pure sukuk is significantly more risky than a pure bonds portfolio(Hassan, 2012).

This research, used the wider sample of retail sukuk and retail bonds in Indonesia. Rather then, what Wafiroh(Wafiroh, 2016) which took sample of SR 05-07 and ORI 010-010 as well as Marimin(Marimin, Mustofa, & Anik, 2016) which took sample of SR 02-05 and ORI 02-010, this

research in order to have a comprehensive and avoid the bias utilize sample form the first issuance of sukuk to the latest one from SR 01-09 and ORI 01-014.

This research is expected to add the evidence of discussion regarding the differences in sukuk and bonds in the world of practice, including the investment preferences as well as educating investors and government in choosing sukuk or bonds as a sustainable and smooth instrument.

METHODOLOGY OF RESEARCH

This study is an empirical study used a quantitative method by comparing the return and risks of retail sukuk and retail bonds in Indonesia. Return calculation uses y*ield to maturity* (YTM) while risk calculation uses Standard Deviation. This study is type of library research study due to the secondary data used in this study.

Type of Research

This research is a quantitative type with a comparative hypothesis. Quantitative method used under consideration of the ordinal data performed in this research. The hypothesis of this research is comparative hypothesis with 2 (two) independent sample. Two points above (ordinal data and two independent sample) are the guidance of deciding which analysis technique should be performed in this research(Sugiyono, 2013).

This study analyzes the comparison of return between retail bonds and retail sukuk using *yield to maturity.* The tool used to measure the comparison is s*tatistical product service solution* (SPSS), while the tool for calculating YTM from each bond and sukuk is *Microsoft Excel* and calculates the overall standard deviation of sukuk and bonds using descriptive analysis using SPSS *software*.

The object of this study is limited to ORI (obligasi negara ritel) or retail bonds and sukuk ritel (SR) or retail sukuk (SR) from 2008 to 2017, namely ORI series 01-14 and SR series 01-09. Data collected related to the calculation is maturity date, nominal value and coupon (ORI) or margin (SR).

Library research isreferring to where this study takes place. According to Bungin library research is the study which get setting place of the library with the object of material in the library. Therefore this study only used the secondary data from the official website of the Ministry of Finance and Indonesia Stock Exchange and other references relevant to this study(Bungin, 2005).

Population and Sample

The population of this study is all types of sukuk and bonds issued by the government. The samples taken are retail sukuk (SR) and retail bonds (ORI) using a *cluster samplingprobability sampling technique. Probability sampling* is sampling technique which provide equal opportunities for all populations. *Cluster sampling* is a technique of determining samples with a cluster when the population is very wide(Sugiyono, 2013). This study used *cluster sampling*. The point in this type of sampling is the argument or the result is not considering the individual argument or result but the argument or result of the unit sampling(Bungin, 2005).

The researcher wants to know the comparison between sukuk and bonds, as well as an educational purpose for calculating YTM subsequently expanding the domestic investor base. Therefore, researchers choose retail bonds and retail sukuk as a sample.

Data Types

Research uses secondary data, coupons and maturity date from retail sukuk and retail bond in 2008-2017. Data is obtained from the official website of the Directorate General of Financing and Risk Management of the Ministry (DGFRM) of Finance of the Republic of Indonesia, Indonesian Stock Exchange (IDX) and the Indonesia Bond Market Directory.

Table 1. Data is on the Issuance of Retail Bonds and Retail Sukuk from 2008 to 2017

No	Series	Tenor	Coupon	Nominal Value (Million USD)	
1	ORI 001	3 Years	12:05%	IDR	2,864,650
2	ORI 002	3 Years	9:28%	IDR	6,193,200
3	ORI 003	4 Years	9:40%	IDR	8,930,695
4	ORI 004	4 Years	9:50%	IDR	12,839,765
5	ORI 005	5 Years	11:45%	IDR	2,662,875
6	ORI 006	3 Years	9.35%	IDR	8,186,730
7	ORI 007	3 Years	7.95%	IDR	7,813,000
8	ORI 008	3 Years	7.30%	IDR	11,000,000
9	ORI 009	3 Years	6.25%	IDR	12,676,745
10	ORI 010	3 Years	8.50%	IDR	20,205,255
11	ORI 011	3 Years	8.50%	IDR	21,215,910
12	ORI 012	3 Years	9.00%	IDR	27,438,755
13	ORI013	3 Years	6.60%	IDR	19,691,455
14	ORI014	3 Years	5.85%	IDR	8,948,660

Table 2. Data is on the Issuance of Retail Bonds and Retail Sukuk from 2008 to 2017

No	Series	Period	Coupon	Nominal Value (Million Rp)	
1	SR-001	3 Years	12.00%	IDR	5,556,290
2	SR-002	3 Years	8.70%	IDR	8,033,860
3	SR-003	3 Years	8.15%	IDR	7,341,410
4	SR-004	3.5 Years	6.25%	IDR	13,613,805
5	SR-005	3 Years	6.00%	IDR	14,968,875
6	SR-006	3 Years	8.75%	IDR	19,323,345
7	SR-007	3 Years	8.25%	IDR	21,965,035
8	SR-008	3 Years	8.30%	IDR	31,500,000
9	SR-009	3 Years	6.90%	IDR	14,037,310

Calculation Method of *Yield to Maturity* and Standard Deviation

Data in the form of maturity time or tenor and coupons as in Tables 1 and 2 are entered into Microsoft Excel software for calculation using the formula. Calculation of *yield to maturity* uses the following formula;

ApproxYTM = (C + ((F - P) / n)) / (F + P) / 2

1. C = *coupon payment*, ie payment of interest on bonds each month.
2. F = *face value*, which is the nominal value of the bond.
3. P = *price*, which is the price of bonds paid to buy bonds.
4. n = how many times the interest is paid during the maturity of the bond.

Excel provides calculation of bond prices, the excel function used is the PV (Present Value) function and *YIELD* function.

Calculation of Standard Deviation is conduct at all ORI and SR *yield to maturity* values from 2008 to 2017 using SPSS software. Standard deviation used to know varian of the deviation from the average(Bungin, 2005).

AnalysisTechnique

The analysis technique used to compare two independent variable is Independent Sample T-Test if the data was normal and *Mann-Whitey U-Test* if the data was not normal using SPSS software. *The Mann-Whitney U-Test is* used to test the comparative hypothesis of two independent small samples if the data is ordinal or nominal, therefore this is a non-parametric statistic. *The Mann-Whitney U-Test* is a form of non-parametric statistics from *independent sample t-test* if the assumption of normality is not fulfilled. Therefore before the *Mann-Whitney U-Test* iscarried out, normality test using *Shapiro Wilk Test* is conduct first(Sugiyono, 2013).

Before entering the numbers into the SPSS software, the calculation of *yield to maturity* and *standard deviation* from each series of Retail Sukuk and Retail Bonds are calculate first, manually with Microsoft excel.

Hypotheses Development

Purnawati stated the fundamental difference between sukuk and obligation lie in the *underlying asset* that require in every sukuk issuance, religiuosity, and that obligation is debt instrument rather than that sukuk is based on equity concept.(Purnawati, n.d.) This fundamental difference should give practical difference as well, hence Hassan compare both using *value at risk* (*VaR*) method on different portfolio, he found that pure sukuk portfolio are more risky than pure bonds portfolio(Hassan, 2012).

Meanwhile Nasir dan Farooq also found sukuk is less risky and more stable instrument rather than the obligation, explained by diversification theory and liquidity perspective(Nasir & Farooq, 2017). Subsequently, Fadhil found that sukuk return index and sukuk growth outstanding are higher than the bonds(Fadhil, 2018). Referring to several findings above, the hypothesis is resulted as follows.

The first hypothesis is to test the comparison of returns between Retail Sukuk and Retail Bonds based on y*ield to maturity* (YTM).

H_1: There is a significance difference in return between Retail Sukuk and Retail Bonds, where the Retail Sukuk returns are higher than Retail Bonds

The second hypothesis is to test the comparison of risk between Retail Sukuk and Retail Bonds based on *Yield to Maturity* (YTM).

H_2: There is a significance difference in risk between Retail Sukuk and Retail Bonds, where Retail Sukuk risk is higher than Retail Bonds.

RESULT AND ANALYSIS

Calculation and Analysis of *Yield to Maturity* of Retail Sukuk and Retail Bond

Based on the results of retail sukuk sales, issued by the Directorate General of Budget Financing and Risk Management Ministry of Finance Republic of Indonesia, the highest average purchases of retail sukuk(Kementerian Keuangan Republik Indonesia Direktorat Jenderal Pengelolaan Pembiayaan dan Risiko, 2018) and retail bond(Kementerian Keuangan Republik Indonesia Direktorat Jenderal Pengelolaan Utang, 2014) are range from 5-100 million. The highest number of profession purchases are from professionals, private employees and Badan Usaha Milik Negara (BUMN)/ institutions for these two instruments with a portion of 32.75%. Followed by entrepreneurs in second place then housewives in third place with 17.32% and 11.67% respectively(Kementerian Keuangan Republik Indonesia Direktorat Jenderal Pengelolaan Pembiayaan dan Risiko, 2018).

The distribution numbe of orders by region is dominated by the western region of Indonesia except Jakarta, which is half of the total order. Besides, the orders in the central and eastern region of Indonesia are at least point of ¼ (one quarter) of the total orders. The distribution in fact applies to both retail sukuk and retail bonds(Kementerian Keuangan Republik Indonesia Direktorat Jenderal Pengelolaan Utang, 2014).

Based on the above data, this section presents an analysis of y*ield to maturity* of retail sukuk and retail bonds. To clarify the description of *yield to maturity* from both instruments, the calculation is performed using the following assumptions;

1. Investors buy the two instruments with a minimum amount of IDR 5,000,000.

2. Investors buy the two instruments with a medium amount of IDR 55,000,000.
3. Investors buy the two instruments with an upper amount of IDR 100,000,000.

The first assumption taking into the minimum account order value of retail bonds and retail sukuk. Subsequently, minimum orders can also be used as education for beginner investors in retail bonds and retail sukuk.

The second assumption takes the median value from 5 (five) – 100 (one hundred) million. Using the formula in *Microsoft Excel* (=MEDIAN) gets a value of 55. The third assumption considers the maximum value of highest average number of orders for retail bonds and retail sukuk(Kementerian Keuangan Republik Indonesia Direktorat Jenderal Pengelolaan Utang, 2014).

The calculation performed with these explanation; AO (Amount order), D (Date), CP (Coupon Payment), CY (Coupon Yield), Y (Yield per-Month), YTM (Yield to Maturity), RM (Return to Maturity) as follows;

AO x CY x CP = Y
Y x D = YTM
YTM + AO = RM

Example showed for the first assumption at series ORI01 as follows;
5,000,000 x 12.05% x 0.833 = 50,208
50,208 x 36 = 1,807,500
1,807,500 + 5,000,000 = 6,807,500

Table 3. the Calculation Using the First Assumption

Series	Amount Order	Date	Coupon Payment	Coupon Yield	Yield / Month	YTM	Return to Maturity
ORI01	5,000,000	36	0.0833	12.05%	50,208	1,807,500	6,807,500
ORI02	5,000,000	36	0.0833	9.28%	38,667	1,392,000	6,392,000
ORI03	5,000,000	48	0.0833	9.40%	39,167	1,880,000	6,880,000
ORI04	5,000,000	48	0.0833	9.50%	39,583	1,900,000	6,900,000
ORI05	5,000,000	60	0.0833	11.45%	47.708	2,862,500	7,862,500
ORI06	5,000,000	36	0.0833	9.35%	38.958	1,402,500	6,402,500
ORI07	5,000,000	36	0.0833	7.95%	33.125	1,192,500	6,192,500
ORI08	5,000,000	36	0.0833	7.30%	30.417	1,095,000	6,095,000
ORI09	5,000,000	36	0.0833	6.25%	26.042	937.500	5,937,500
ORI10	5,000,000	36	0.0833	8:50%	35.417	1,275,000	6,275,000
ORI11	5,000,000	36	0.0833	8:50%	35.417	1,275,000	6,275,000
ORI12	5,000,000	36	0.0833	9:00%	37,500	1,350,000	6,350,000
ORI13	5,000,000	36	0.0833	6.60%	27,500	990,000	5,990,000
ORI14	5,000,000	36	0.0833	5.85%	24.375	877.500	5,877,500

Above table illustrates the return if investor buys retail bonds with a minimum order of 5,000,000 (five million). If an investor holds the securities to maturity, the return received on the longest time and highest coupon (11.45%) is IDR 2,862,500 (two million eight hundred sixty two thousand five hundred rupiah). Then the total return that will be received for the *yield to maturity* on ORI05 investment for 5 years with the highest coupon and the longest period of time is IDR 7,862,500 (seven million eight hundred sixty two five hundred rupiah).

Based on the above table, the lowest return that can be obtained by retail bond investors if ordering with a minimum amount of IDR 5,000,000 (five million rupiah) is 877,500 (eight hundred seventy seven thousand five hundred rupiah) with a coupon of 5.85%. Even though the rewards are very low, the coupon rate has at least protected the value of money from inflation and is better than just if only saved in the bank.

Considering that investment in government instruments, especially retail bonds, is also a real contribution of domestic investors to the country's development efforts.

Table 4. The retail sukuk table

Series	Amount Order	Maturity Date	Coupon Payment	Coupon	Yield/ Month	YTM	Return to Maturity
SR01	5,000,000	36	0.0833	12.00%	50,000	1,800,000	6,800,000
SR02	5,000,000	36	0.0833	8.70%	36,250	1,305,000	6,305,000
SR03	5,000,000	36	0.0833	8.15%	33,958	1,222,500	6,222,500
SR04	5,000,000	42	0.0833	6.25%	26,042	1,093,750	6,093,750
SR05	5,000,000	36	0.0833	6:00%	25,000	900,000	5,900,000
SR06	5,000,000	36	0.0833	8.75%	36.458	1,312,500	6,312,500
SR07	5,000,000	36	0.0833	8:25%	34.375	1,237,500	6,237,500
SR08	5,000,000	36	0.0833	8:30%	34.583	1,245,000	6,245,000
SR09	5,000,000	36	0.0833	6.90%	28.750	1,035,000	6,035,000

Above table is a table of investor return list if investor buys retail sukuk with a minimum order of IDR 5,000,000 (five million rupiah). If the investor holds the securities to maturity, the reward received at the highest coupon (12%) is IDR 1,800,000 (one million eight hundred thousand rupiah). Then the total *yield to maturity* to be received for the SR01 3 years investment with the highest coupon is IDR 6,800,000 (six million eight hundred thousand rupiah).

According to the table, the lowest return that can be obtained by retail sukuk investors if ordering with a minimum amount of IDR 5,000,000 (five million rupiah) is IDR 900,000 (nine hundred thousand rupiah) with a coupon of 6.00%.

Table 5. Calculations using the second assumption

Series	Amount Order	Maturity Date	Coupon Payment	Coupon Yield	Yield/ Month	YTM	Return to Maturity
ORI01	55,000,000	36	0.0833	12.05%	55,292	19,882,500	74,882,500
ORI02	55,000,000	36	0.0833	9.28%	425,333	15,312,000	70,312,000
ORI03	55,000,000	48	0.0833	9.40%	430,833	20,680,000	75,680,000
ORI04	55,000,000	48	0.0833	9.50%	435,417	75,900,000	20,900,000
ORI05	55,000,000	60	0.0833	11.45%	524.792	31,487,500	86,487,500
ORI06	55,000,000	36	0.0833	9.35%	428.542	15,427,500	70,427,500
ORI07	55,000,000	36	0.0833	7.95%	364.375	13,117,500	68,117,500
ORI08	55,000,000	36	0.0833	7.30%	334.583	12,045,000	67,045,000
ORI09	55,000,000	36	0.0833	6.25%	286.458	10,312,500	65,312,500
ORI10	55,000,000	36	0.0833	8.50%	389,583	14,025,000	69,025,000
ORI11	55,000,000	36	0.0833	8.50%	389,583	14,025,000	69,025,000
ORI12	55,000,000	36	0.0833	9.00%	4,8,500	14,850,000	69,850,000
ORI13	55,000,000	36	0.0833	6.60%	302,500	10,890,000	65,890,000
ORI14	55,000,000	36	0.0833	5.85%	268,125	9,652,500	64,652,500

The table shows an overview of return if an investor buys retail bonds with an order using a median value of IDR 55,000,000 (fifty five million rupiah). If an investor holds the securities to maturity, the return received at the highest and the longest time coupon (11.45%) is IDR 31,487,500 (thirty one million four hundred eighty seven thousand five hundred rupiah). Then the total return that will be received for the ORI05 investment returns for 5 years with the highest

coupon and the longest period of time is IDR 86,487,500 (eighty six million four hundred eighty seven thousand five hundred rupiah).

The above table, present lowest reward that can be obtained by retail bond investors if ordering with a median value of 55,000,000 (fifty five million) is IDR 9,652,500 (nine million six hundred fifty two thousand five hundred rupiah) with a coupon of 5.85%. Although the rewards are very low, the coupon rate has at least protected the value of money from inflation and is better to only saved in the bank.

Table 6. The retail sukuk table results for second assumption

Series	Amount Order	Maturity Date	Coupon Payment	Coupon Yield	Yield / Month	YTM	Return to Maturity
SR01	55,000,000	36	0.0833	12:00%	550,000	19,800,000	74,800,000
SR02	55,000,000	36	0.0833	8.70%	398.750	14,355,000	69,355,000
SR03	55,000,000	36	0.0833	8:15%	373.542	13,447,500	68,447,500
SR04	55,000,000	42	0.0833	6:25%	286.458	12,031,250	67,031,250
SR05	55,000,000	36	0.0833	6.00%	275,000	9,900,000	64,900,000
SR06	55,000,000	36	0.0833	8.75%	401,042	14,437,500	69,437,500
SR07	55,000,000	36	0.0833	8.25%	378,125	13,612,500	68,612,500
SR08	55,000,000	36	0.0833	8.30%	380,417	13,695,000	68,695,000
SR09	55,000,000	36	0.0833	6.90%	316,250	11,385,000	66,385,000

A table displays list of return if investors buy retail sukuk with orders using a median value of IDR 55,000,000 (fifty five million rupiah). If investor holds the securities to maturity, the reward received at the highest coupon (12%) is IDR 19,800,000 (nineteen million eight hundred thousand rupiah). Then the total return to be received for the SR01 investment yield for 3 years with the highest coupon is IDR 74,800,000 (seventy four million eight hundred thousand rupiah).

According to the table, the lowest return that can be obtained by retail sukuk investors, if ordering with a median value of IDR 55,000,000 (fifty five million rupiah) is IDR 9,900,000 (nine million nine hundred thousand rupiah) with a coupon of 6.00%.

Table 7.Calculations using the third assumption

Series	Amount Order	Maturity Date	Coupon Payment	Coupon Yield	Yield/ Month	YTM	Return to Maturity
ORI01	100 000 000	36	0.0833	12.05%	1,004,167	36,150,000	136,150,000
ORI02	100 000 000	36	0.0833	9:28%	773.333	27,840,000	127,840,000
ORI03	100 000 000	48	0.0833	9:40%	783.333	37,600,000	137,600,000
ORI04	100 000 000	48	0.0833	9:50%	791.667	38,000,000	138,000,000
ORI05	100,000,000	60	0.0833	11.45%	954,167	57,250,000	157,250,000
ORI06	100,000,000	36	0.0833	9.35%	779,167	28,050,000	128,050,000
ORI07	100,000,000	36	0.0833	7.95%	662,500	23,850,000	123,850,000
ORI08	100,000,000	36	0.0833	7.30%	608,333	21,900,000	121,900,000
ORI09	100,000,000	36	0.0833	6.25%	520,833	18,750,000	118,750,000
ORI10	100,000,000	36	0.0833	8.50%	708,333	25,500,000	125,500,000
ORI11	100,000,000	36	0.0833	8.50%	708,333	25,500,000	125,500,000
ORI12	100,000,000	36	0.0833	9.00%	750,000	27,000,000	127,000,000
ORI13	100,000,000	36	0.0833	6.60%	550,000	19,800,000	119,800,000
ORI14	100,000,000	36	0.0833	5.85%	487,500	17,550,000	11 7,550,000

The table above is a glance of return if investors buy retail bonds by ordering using an upper value of 100,000,000 (one hundred million). If an investor holds the securities to maturity, the reward received on the highest and longest time coupon (11.45%) is IDR 57,250,000 (fifty seven million two hundred fifty thousand rupiah). Then the total return that will be received for the ORI05 investment for 5 years with the highest coupon and longest period of time is IDR 86,487,500 (eighty six million four hundred eighty seven thousand five hundred rupiah).

As for looking at the table above, the lowest reward that can be obtained by retail bond investors, if ordering with an upper value of IDR 100,000,000 (one hundred million rupah) is IDR 17,550,000 (seventeen million five hundred fifty thousand rupiah) with a coupon of 5.85%. Even though the rewards are very low, the coupon rate has at least protected a value of money from inflation and is better if only saved in the bank.

Table 8. The retail sukuk table results for third assumption

Series	Amount Order	Maturity Date	Coupon Payment	Coupon Yield	Yield / Month	YTM	Return to Maturity
SR01	100,000,000	36	0.0833	12.00%	1,000,000	36,000,000	136 000 000
SR02	100,000,000	36	0.0833	8.70%	725,000	26,100,000	126,100,000
SR03	100,000,000	36	0.0833	8:15%	679.167	24,450,000	124,450,000
SR04	100,000,000	42	0.0833	6:25%	520.833	21,875,000	121,875,000
SR05	100,000,000	36	0.0833	6:00%	500,000	18,000,000	118 000 000
SR06	100,000,000	36	0.0833	8.75%	729.167	26,250,000	126,250,000
SR07	100,000,000	36	0.0833	8:25%	687.500	24,750,000	124,750,000
SR08	100,000,000	36	0.0833	8:30%	691.667	24,900,000	124,900,000
SR09	100,000,000	36	0.0833	6.90%	575,000	20,700,000	120,700,000

A table of shows the return if investor buys retail sukuk by order using an upper value of IDR 100,000,000 (one hundred million rupiah). If the investor holds the sukuk ritel to maturity, the reward received at the highest coupon (12%) is IDR 36,000,000 (thirty six million rupiah). Then the total compensation to be received for the investment result for 3 years is at SR01 with the highest coupon is IDR 136,000,000 (one hundred thirty six million rupiah).

According to the above table, the lowest return that can be obtained by retail sukuk investors if ordering with an upper value of IDR 100,000,000 (one hundred million rupiah) is IDR 18,000,000 (eighteen million riupiah) with a coupon of 6.00%.

Comparative Analysis of *Yield To Maturity* and *Standard Deviation of* Retail Sukuk and Retail Bonds

Analysis is carried out by taking the first, second and third assumption that is, if investors buy with a minimum, median and upper order. A very clear difference in the retail sukuk 05 series and retail bonds can be explained because in addition to the ORI05 series retail bonds coupons are higher than the SR05 retail sukuk, also for a longer period of ORI05, which is 6 years while SR05 is only 3 years. This is in line with the theory which states that the return relationship with the time period is positive(Bodie, Kane, & Marcus, 2014).

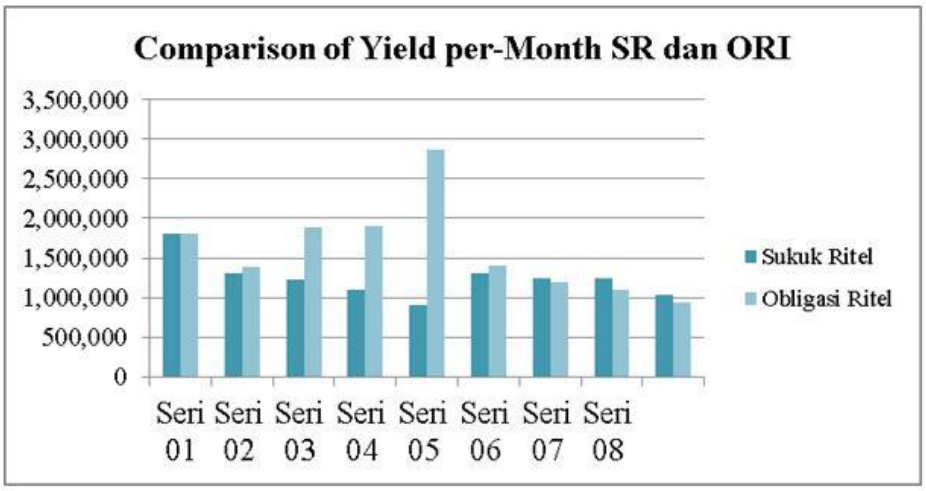

Figure 1. Yield comparison between retail sukuk and retail bond (5,000,000) in rupiah units

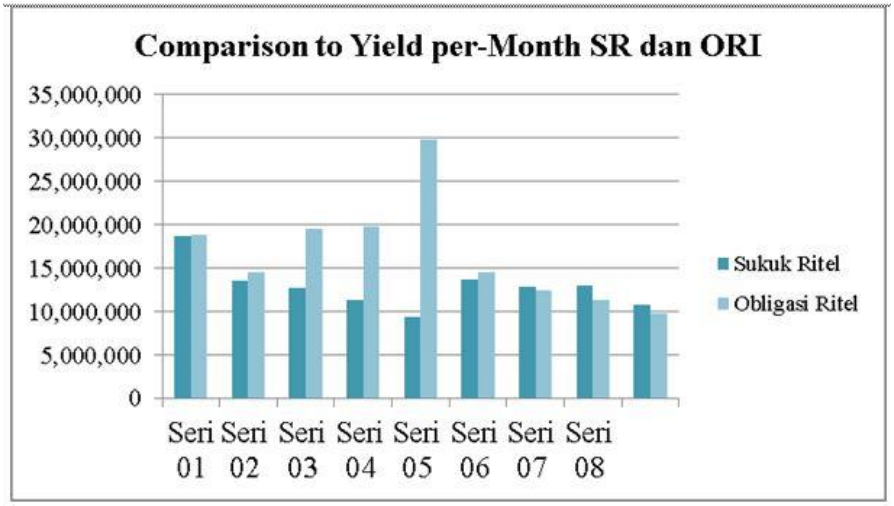

Figure 2. Yield comparison between retail sukuk and retail bond (55,000,000) in rupiah units

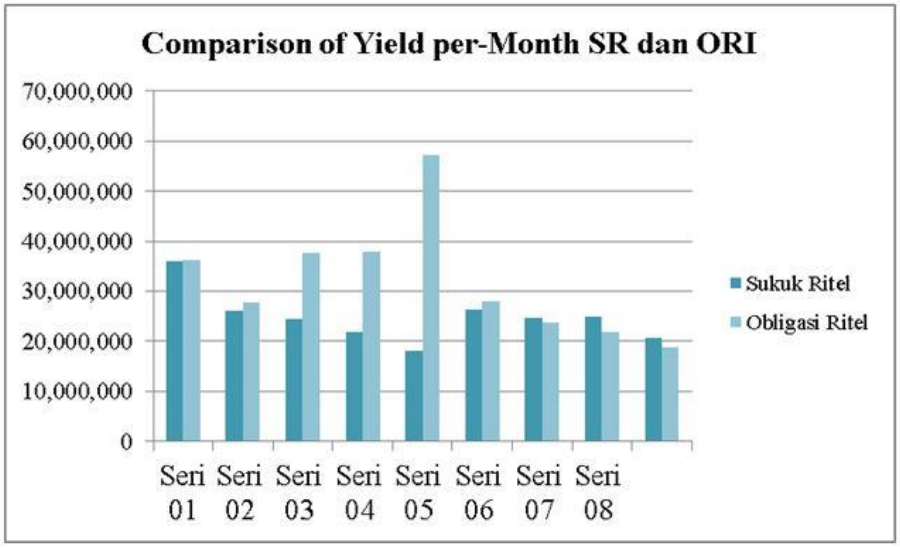

Figure 3. Yield comparison between retail sukuk and retail bond (100,000,000) in rupiah units

Elaborating above figure, even though retail bonds have a higher maximum return value than sukuk, the minimum value of retail bonds is also lower than the minimum value of sukuk. Then it can be explained that retail sukuk has more equitable distribution and more stable in return compared to retail bonds.

Hypothesis Test H1: There is a difference in return between Retail Sukuk and Retail Bonds

In order to get a clearer picture of the calculation results of *yield to maturity* of retail bonds and retail sukuk, the data were analyzed using descriptive statistics so that the average of each variable could be known using mean.

Table 9.Descriptive Statistics

Instrumen		N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance
Obligasi Ritel	Yield to Maturity	14	1985000	877500	2862500	1445500.00	524865.770	275484076923.077
	Valid N (listwise)	14						
Sukuk Ritel	Yield to Maturity	9	900000	900000	1800000	1239027.78	250605.344	62803038194.444
	Valid N (listwise)	9						

Based on the *mean* as the table described, retail bonds are higher than retail sukuk. Retail bond has *mean* at value IDR 1,445,500 (one million four hundred forty five thousand five hundred) while retail sukuk is IDR 1,239,027 (one million two hundred thirty six twenty seven). This is due to the coupon also to the period of retail bonds, ORI03, ORI04, ORI05 which has longer maturity date than retail sukuk with the same series. In addition to the three series, the period of retail sukuk and retail bonds are the same, only 3 (three) years with coupons or margins that are slightly different.

Normality test using *Shapiro Wilk* due to the ammount of data which below 30, the spss output are as follows

Table 10. Tests of Normality

	Kolmogorov-Smirnov(a)			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Instrumen	.392	23	.000	.622	23	.000

a Lilliefors Significance Correction

Sig. of Shapiro *Wilk* is 0.000 means below 0.05 if so concluded that the data was not normal. Therefore analysis technique used to compare independent sample is non-parametric test namely, *Mann Whitney U-Test*.Then the data from above table is tested whether there are significant differences between *yield to maturity of* both, which means testing the first hypothesis, as follows;

H_1: There is a difference in return between Retail Sukuk and Retail Bonds, where the Retail Sukuk returns are higher than Retail Bonds. The mean of the two instruments was compared using the Mann Whitney U-Test as follows;

Table 11. Ranks

	Instrument	N	Mean Rank	Sum of Ranks
Yield to Maturity	Retail Bonds	14	13.21	185.00
	Retail Sukuk	9	10.11	91.00
	Total	23		

Table 12. Test Statistics (b)

	Yield to Maturity
Mann-Whitney U	46,000
Wilcoxon W	91,000
Z	-1,071
Asymp. Sig. (2-tailed)	.284
Exact Sig. [2 * (1-tailed Sig.)]	.305 (a)

a. Not corrected for ties.
b. Grouping Variable: Instrument

Result of *Mann Whitney U-Test* above has a value asymp. sig. (2-tailed) 0.284 or bigger than 0.05 which means that there is no significance difference between *yield to maturity* of retail bonds and retail sukuk in the practice in the bond market in Indonesia and the hypothesis is not supported.

Hypothesis Test H2: There is a Difference in Risk between Retail Sukuk and Retail Bonds

Whereas by comparing the standard deviation as a measure of the risk of both instruments using the *Mann Whitney U-Test* and testing the second hypothesis, namely;

H_2: There is a difference in risk between Retail Sukuk and Retail Bonds, where Retail Risk Sukuk is higher than Retail Bonds.

Then the results are as follows;

Table 13. Ranks

	Instruments	N	Mean Rank	Sum of Ranks
SD	Retail Bond	1	2:00	2:00
	Retail Sukuk	1	1.00	1.00
	Total	2		

Table 14.Test Statistics (b)

	SD
Mann-Whitney U	.000,
Wilcoxon W	1000
Z	-1000
Asymp. Sig. (2-tailed)	.317
Exact Sig. [2 * (1-tailed Sig.)]	1,000 (a)

a. Not corrected for ties.
b.Grouping Variable: Instrument

Result of *Mann Whitney U-Test* above has a value asymp. sig. (2-tailed) 0.317 or bigger than 0.05 which means that there is no significance difference between the *standard deviation* of retail bonds and retail sukuk in the practice of the bond market in Indonesia.

To strengthen the findings of this study, relevant analysis based on credible data and previous research that had conclusions that were in accordance with this study is conducted. In the table of calculation of *yield to maturity* of retail bonds and retail sukuk, it was found the difference in *yield of maturity* between the two instruments, was due to differences in retail bond coupons and retail sukuk margins. In addition, related to the basis for calculating return, namely *yield to maturity, a* longer period of time on retail bonds also causes differences in the benefits received until maturity.

Wafiroh who examined the ORI and SR samples, both instrument are compared according to the *coupun rate, yield to maturity,* and standard deviation, saying there is no difference between retail bonds and retail sukuk. Wafiroh said that descriptively retail bonds have a higher *yield to*

maturity and standard deviation than retail sukuk. On the other hand Marimin et all., used the closing price data, state that retail bond has a lower return then retail sukuk. As what Fadhlil findings that sukuk descriptively showed higher return.

Using a wider sample, this study corroborates Marimin et all. research findings which state there is no difference between retail sukuk and retail bonds. Marimin uses ORI series 02-010 with SR series 02-05. Other research used the indices for a sample as Fadhlil compares return portfolios of retail bond and retail sukuk indices were find no significance different. In his discovery Marimin also mentioned, that the level of bond risk was higher than the risk level of retail sukuk which meant strengthening this research(Marimin et al., 2016).

Thus it can be said that this study corroborates previous research with the finding that there are no significant differences in return and risks between retail bonds and retail sukuk. This study adds a point of the insignificant difference and finds clear reasons based on valid data, that retail bonds have a coupon rate and a relatively longer period of time than retail sukuk.

Compulsory to this discussion, Hassan's research(Hassan, 2012) found that adding sukuk can be useful if added to a portfolio with fixed income. Supports the calculation results of the table stating that a value of *yield to maturity* retail sukuk is not smaller than the value of *yield to maturity* of retail bond. Which means that retail sukuk is more stable. Bakhshi's research which states that sukuk is a more stable instrument than bonds(Kostandyan, n.d.) as what Kostandyan who analyze the different using value at risk method of both portfolio prove the fact that sukuk is more stable as of it backed up by the real *underlying asset*.

The study uses closing price data on sukuk and bonds using samples from Indonesia, Malaysia, Singapore, Pakistan. UAE (United Arab Emirates), Bahrain and Qatar, which calculates the effect of abnormal returns on capital market reactions, found that *cumulative average abnormal return* (CAAR) sukuk and bonds have a negative effect on market reactions(Alam, Hassan, & Haque, 2013)

CONCLUSION

This study aims to analyze and test whether there are differences in return and risks between retail bonds and retail sukuk. The conclusion of this study is divided into two parts; First, using the Mann Whitney U-Test Test, it was found there was no significant difference between retail bonds and retail sukuk with*yield to maturity*. Nevertheless the difference between the two remains and is caused by retail bond coupons that are higher than the retail sukuk margin. In addition, a longer period of several series of retail bonds than retail sukuk also causes this difference.

Second, using the Mann Whitney U-Test Test, the results stated that there was no significant difference between retail bonds and retail sukuk with *standard deviation*. Retail Sukuk has a lower level of risk than retail bonds, which means retail sukuk is a more stable instrument.

Thus it can be said that, this study corroborates previous research with the finding that there are no significant differences in return and risks between retail bonds and retail sukuk. This study adds a point of the insignificant difference and finds clear reasons based on valid data that retail bonds have coupon rate and a relatively longer period of time than retail sukuk.

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